Psion Teklogix RA2040
802.11 b/g Wireless CF Card
User Manual

Contents

1.0 Introduction

The Psion Teklogix RA2040 is a Compact Flash 802.11 b/g radio. The small CF form factor allows the card to be used in mobile computing devices such as a PDA. The card is WiFi certified hence able to communicate with other vendor's WiFi APs. In addition it supports a foray of security features and CCXv3 for compatibility with Cisco certified APs.

Features

Hardware	CF Type II extended
	Available in 2 versions: internal antenna and external antenna
	-20°C to +70°C
RF	802.11 b/g complaint, WiFi certified
	+13dBm ±1.5dBm power output
	Antenna diversity is not supported
	Marvell 88W8385 MAC and 88W8015 Transceiver chipset
Software	Driver: WinCE4.2, WinCE5.0, Windows Pocket PC2003, Window Mobile Edition, Linux 2.4.22 and above
	Security: WEP, TKIP, WPA, WPAII, AES-CCMP, CCX v1-3

2.0 Install and Configure a Wireless Network

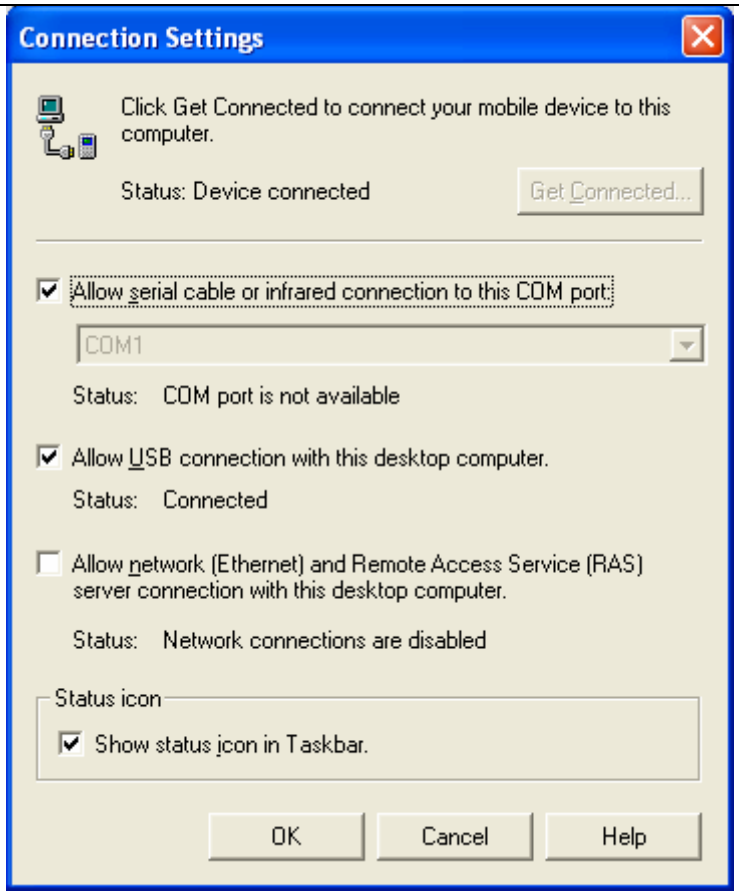
Follow these steps to install the Marvell WinCE driver.

Step 1: Installing Microsoft ActiveSynch on a host computer.

- Please download MiS ActiveSynch® 3.0 or higher and install on your host computer.

- Make sure the “Allow USB connection with this desktop computer” button is checked. This can be viewed under “File” then “Connection Settings…”

- Use a USB cable to connect the mobile device to the PC.

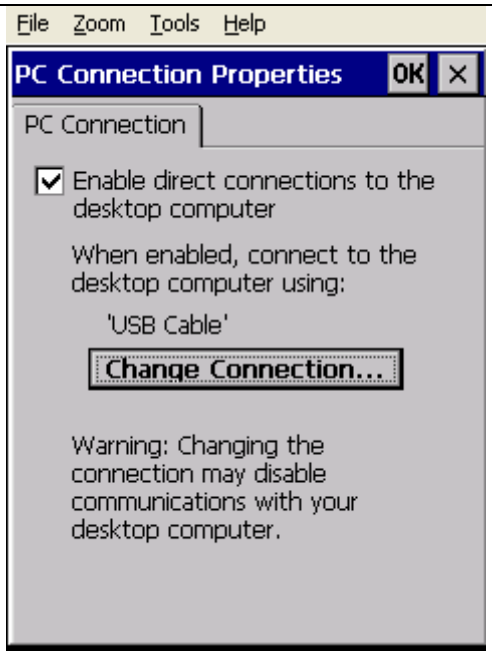


Step 2: Setting up the mobile device for ActiveSync.

- The mobile device should have linked with the desktop computer once the USB cable is connected. If not then follow these steps.

- Open “Control Panel” and double click on “PC Connection” icon.

- Make sure the “Enable direct connections to the desktop computer” is checked.



Step 3: Downloading driver to mobile device.

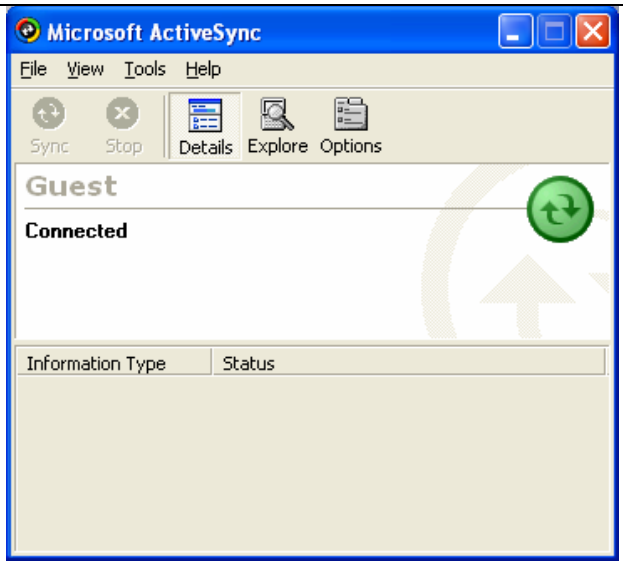
- Once ActiveSync recognizes a device it will ask if you want to set up a new partnership. Select “No” and click “Next” to see the root screen.

- Click “Explore” then “Flash Disk” to see the content of the non-volatile storage area.

- Download the driver CAB file to this Flash Disk directory.

- Change the property of the driver CAB file to “Read-only”.

- Double click on the driver CAB file to install the Marvell driver it in its default location.



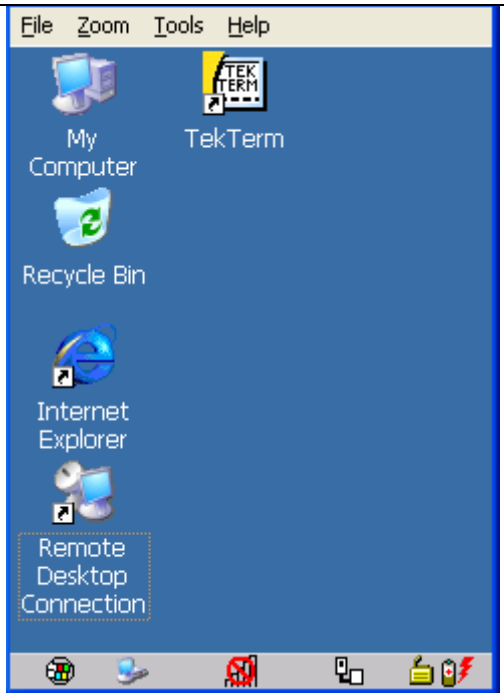
Step 4: Disconnect the mobile device and restart

- Remove the USB cable

- Turn off mobile device.

- Insert the radio if not already done so.

- Turn on mobile device. You should see the generic WLAN icon (5 unfilled bars) with the red circle and slash indicating the radio driver has loaded but the radio is not associated to any AP.



Step 5: Setting up the mobile device to connect to a wireless LAN

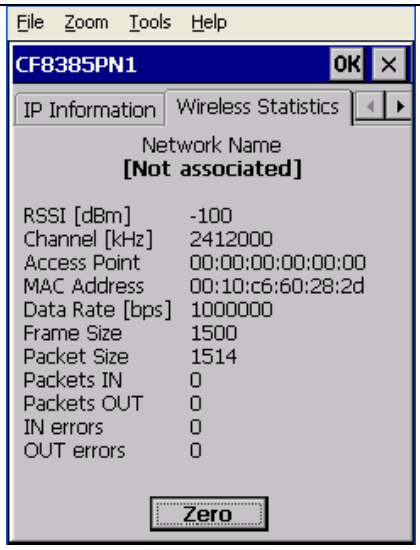
- Double click on the WLAN signal quality icon.

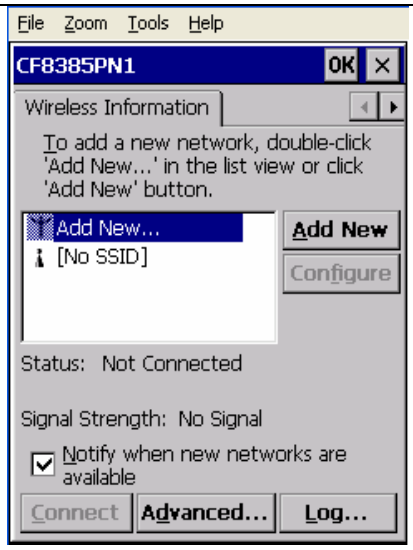
- Click on the right arrow button to see the “Wireless Information” tab.

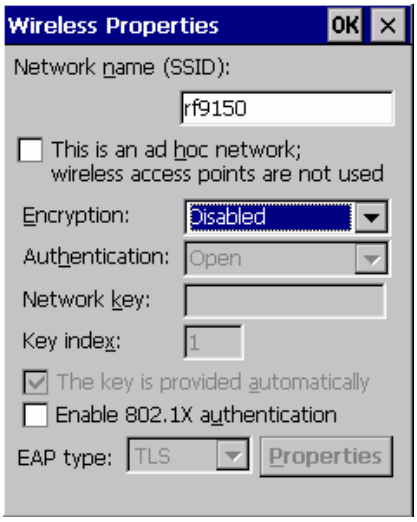
- Click “Add New”.

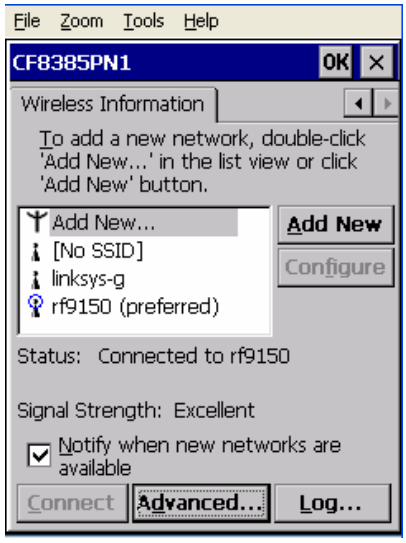
- Enter the SSID name of the AP. The example shows an unsecured connection to an AP with SSID “rf9150”. Click OK to save the settings.

- The mobile device should now be associated with the desired SSID.









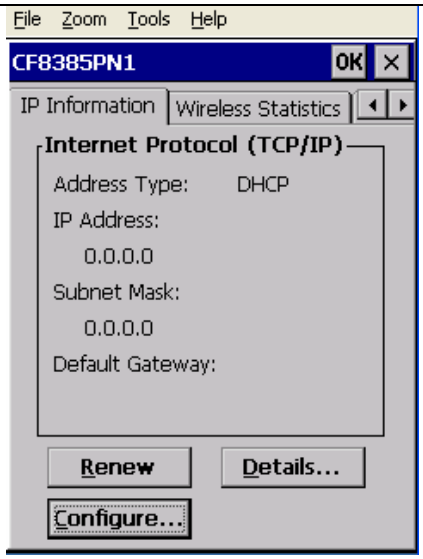
Step 6: Setting up the mobile device to connect to a network

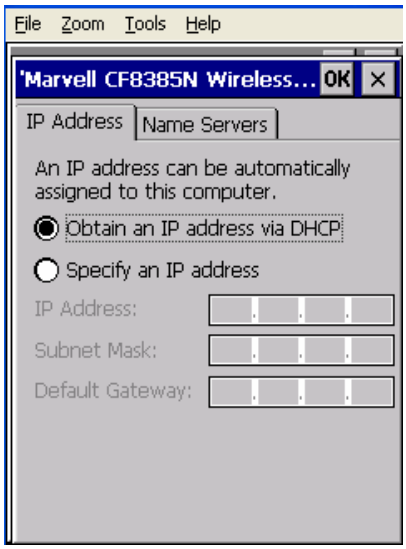
- Click on the left arrow key to see the “IP Information” tab.

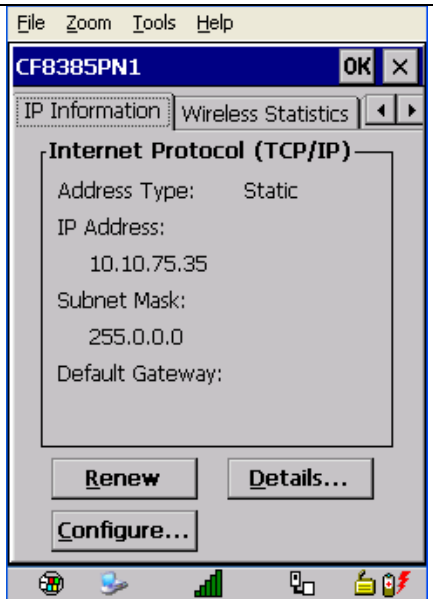
- Click “Configure” to see the IP “Address” window.

- In most situation “Obtain an IP address via DHCP” will be checked. Click “OK” to close.

- If no DHCP server is available then manually assign an IP address and subnet mask.





- If all goes well, you should see that the radio has taken an IP address and the signal quality icon no longer shows the red circle.	

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3.0 Specification

亞旭電腦股份有限公司
ASKEY COMPUTER CORP.

WLF3020-D33(ROHS) Design Specification Rev 2.3

Hardware

Host Interfaces	Compact Flash
Compatible Interfaces	Compact Flash TypeII
Form factor	Compact Flash TypeII
Chipset	MARVELL 88W8385 + 88W8015
Operation Voltage	DC 3.3V
Network Standards	IEEE 802.11g/b
Modulation Techniques	DBPSK, DQPSK, CCK, 16QAM, 64QAM,
Modulation Technology	DSSS and OFDM
Data Rate	802.11b: 11, 5.5, 2, 1 Mbps 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps
Network Architectures	Infrastructure and Ad Hoc
Operating Frequencies	2.4 – 2.5 GHz

Operating Channels	802.11b/g: 1-11 for North America
RF Output Power	Before antenna 802.11b (1M,2M,5.5M,11M) : 15 dBm + - 1.5dBm 802.11g (6M,9M,12M,18M,24M,36M, 48M,54M) : 13 dBm + - 1.5dBm
Receiver sensitivity	802.11b:1M=-89dBm,2M=-89dBm,5.5M=-89dBm,11M=-87dBm 802-11g:6M=-83dBm,9M=-83dBm,12M=-83dBm,18M=-83dBm,24M=-81dBm 36M=-78dBm,48M=-74dBm,54M=-72dBm
Power Consumption	Tx peak: 490mA @ 3.3VDC; Rx peak: 260mA @ 3.3VDC
Support Voltage	3.3V
Security	WEP 64-and 128-bit encryption with hardware TKIP processing. WPA. AES-CCMP hardware implementation as part of 802.11i security standard
Delay Tolerance	Multipath R.M.S Delay Spread @ 10%FER 680 ns in 11M mode,150ns in 54M mode
Software Support	Windows CE 4.2 & 5.0,.Linux
Temperatures	Operates from -20 to 70 ℃ Storage from -40 to 120 ℃
Humidity (non-condensing)	5 to 95%
Certifications	Wi-Fi Pretest*; FCC part 15C/15.247*; ETS 300 328-2*; UL*; IEC60950*; EN 301 489-1,17*; prEN50371*;CE Mark*; TELEC*

Marvell WLAN 802.11b/g CF8385PN Software Feature

Core Features	Short preamble
	802.11b, 802.11g, and g/b mix-mode infrastructure
	802.11b and 802.11g Adhoc mode
	Transmit fragmentation and receive defragmentation
	Client IEEE Power Save Infrastructure & Adhoc mode
	Basic rate adaptation - 11g/b for optimizing each STA throughput
	Background scan
Security	64/ 128-bit WEP Encryption and open/ shared authentication
	WPA PSK
	WPA 802.1x
	WPAII PSK**

	WPAII 802.1x**
	Cisco LEAP & PEAP
	Cisco CCX V1 (LEAP)
	Cisco CCX V2 (PEAP)
	Cisco CCX V3 (EAP- Fast)**
	Hardeare AES
	802.11i**
	AH Security**
IEEE Standards	IEEE 802.11b
	IEEE 802.11g
	IEEE 802.11d**
	IEEE 802.11e (EDCA)**
	IEEE 802.11e (HCCA)**
	IEEE 802.11h (DFS and TPC)**
Other Standards	Wi-Fi WME**
	Wi-Fi WSM APSD**
Drivers for the following Operating Systems	Windows CE.net (CE4.2, CE5.0) Windows Pocket PC 2003 Windows Mobile Edition Linux 2.4.22 and above
Network Protocol	TCP/IP, IPX

** Support in the future

Warning: To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 20cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operation at closer than this distance is not recommended.

FCC Part 15 Statement

This device complies with Part 15 of the FCC Rules. Operation subject to the following conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

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This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This product has to use MOBILEMARK antenna model IMAG5-2400.

4.0 Basic Troubleshooting

Symptom	Cause	Remedy
“Wireless card not recognized” message during start up	Unknown	Re-install driver
Wireless network detected but unable to connect	Security settings are not valid	Configure security feature

Labelling: When the radio module is assembled inside a host and is not visible from outside then the host equipment has to be labelled as follows:

This product contains:
Psion Teklogix Model: RA2040
FCC ID: GM3RA2040
IC: 2739D-RA2040

WARNING: Changes or modifications not expressly approved by Psion Teklogix Inc. could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.